Listing of Claims

The following is a listing of claims that takes the place of all prior claims.

Claim 1. (currently amended) A flow controller for releasably blocking a flow of liquid in a flow path defined by a closed perimeter, the flow controller comprising:

a rigid self-supporting panel configured to overlap the closed perimeter, the

panel being provided with a first hinge member configured to mount the panel in a normal orientation overlapping the closed perimeter to substantially block the flow path, the first hinge member being further configured to allow the panel to move ~~partially~~ from the normal orientation to release the flow of the liquid, the panel being further configured with a torque member to define an amount of a normal process force of the flow of the liquid to be substantially blocked by the panel and an amount of a hydrodynamic force of the flow of the liquid to be released by the panel.

Claim 2. (currently amended) A flow controller as recited in claim 1, wherein:

the panel has a first axis extending parallel to ~~across~~ a first side of the perimeter

and a second axis ~~extending~~ extends away from the first axis ~~along a second length of the panel~~, the first hinge member being parallel to the first axis, and

the torque member is located along the second axis spaced from the first axis to apply a restorative torque to the panel in opposition to the amount of the normal

process force of the flow of the liquid substantially blocked by the panel.

Claim 3. (currently amended) A flow controller as recited in claim 1, wherein:

the panel has a first axis extending parallel to ~~across~~ a first side of the perimeter

and

a second axis extending away from the first axis ~~along a second length of the panel~~, the first hinge member being parallel to the first axis, and

the torque member is located along the second axis spaced from the first axis to apply a restorative torque to the panel in opposition to and less than the amount of the hydrodynamic force of the flow of the liquid to be released by the panel.

Claim 4. (currently amended) A flow controller as recited in claim 1, wherein:

the panel is configured with a central web surrounded by a soley-bent frame,

the frame ~~comprising~~ comprises opposed side sections ~~a top section and a lower section~~;

the first hinge member is ~~being~~ configured in the opposed side sections ~~top section~~; and

the torque member is ~~being spaced from the top section and~~ configured with a ~~selected~~ weight having a selected value so that the weight acting around the first hinge member defines ~~is adapted to define~~ the amount of the normal process force of the flow of the liquid to be substantially blocked by the panel and the amount of the hydrodynamic force of the flow of the liquid to be released by the panel.

Claim 5. (currently amended) A flow controller as recited in claim 1, wherein:

the panel is configured with a series of offsets to define channels configured to resist the amount of the normal process force of the flow of the liquid to be substantially blocked by the panel, the channels comprise ~~comprising~~ a top channel section ~~and a lower channel section~~;

the first hinge member is ~~being~~ configured in the top channel section; and

the torque member is ~~being spaced from the top channel section and~~ configured with a ~~selected~~ weight having a selected value which when acting around the first hinge member defines ~~is~~ ~~adapted to define~~ the amount of the normal process force of the flow of the liquid to be substantially blocked by the panel and the amount of the hydrodynamic force of the flow of the liquid to be released by the panel.

Claim 6. (currently amended) A flow controller as recited in claim 1, wherein:

the panel is configured with a unitary plank fabricated from redwood, the

plank is ~~being~~ configured to resist the amount of the normal process force of the flow of the liquid to be substantially blocked by the panel, the plank comprises ~~comprising~~ a top section ~~and a lower section~~;

the first hinge member is ~~being~~ configured in the top section; and

the torque member is ~~being spaced from the top section and~~ configured with a ~~selected~~ weight having a selected value which when applied around the first hinge member defines ~~adapted to define~~ the amount of the normal process force of the flow of the liquid to be substantially blocked by the panel and the amount of the hydrodynamic force of the flow of the liquid to be released by the panel.

Claims 7-32 (canceled)

Claim 33. (new) A flow controller as recited in claim 4, wherein:

the frame further comprises a lower section; and

the torque member is located adjacent to the lower section.

Claim 34. (new) A flow controller for releasably blocking a flow of liquid that in an unblocked condition would flow in a flow path defined by a closed perimeter that is in a vertical orientation, the flow controller comprising:

a rigid self-supporting panel configured with a hinge member to mount the panel in a normal vertical orientation overlapping the closed perimeter to substantially and releasably block the flow path, the hinge member being configured to allow the panel to move from the normal orientation to a release orientation, the panel being further configured to urge the panel to resist a normal value of a process force of the flow of the liquid by remaining substantially in the vertical orientation, the panel being further configured to allow the flow of the liquid in the flow path and having an uncontrollable value of a hydrodynamic force so that the hydrodynamic force is released by movement of the panel substantially in relation to the vertical orientation, the movement being to the release orientation.

Claim 35. (new) A flow controller as recited in claim 34, wherein:

the configuration of the panel to urge and allow comprises a torque member secured to the panel at a location spaced by a moment arm distance from the hinge member, the torque member having a weight selected to act around the hinge member against the normal value of the process force so that the panel remains substantially in the vertical orientation;

the weight is further selected to act around the hinge member against the uncontrollable value of the hydrodynamic force to permit the movement of the panel to the release orientation beyond a location of the panel remaining substantially in the vertical orientation so that the hydrodynamic force is released.

Claim 36. (new) A flow controller as recited in claim 35, wherein the panel is configured from fiber reinforced plastic.

Claim 37. (new) A flow controller as recited in claim 34, wherein:

the resistance to the flow of the liquid by the panel in the normal vertical orientation or substantially in the vertical orientation avoids interference with desired processing of the liquid;

the release of the hydrodynamic force minimizes damage to the flow controller from the hydrodynamic force;

the panel has a first axis extending generally horizontally and a second axis extending generally vertically, the hinge member is parallel to the first axis; and

the torque member is located along the second axis vertically spaced from the first axis, the configuration of the torque member comprises weight acting around the hinge member to apply a restorative torque to the panel in opposition to the normal value of the process force, the weight has a value less than that required to resist the uncontrollable value of the hydrodynamic force by maintaining the panel substantially in the vertical orientation, and that value of the weight is such that when that weight acts around the hinge member the hydrodynamic force is released by the movement of the panel to the release orientation so that there is substantial flow of the liquid in the flow path past the flow controller in response to the hydrodynamic force.

Claim 38. (new) A flow controller as recited in claim 34, wherein the configuration of the panel includes an upper side and the hinge member located adjacent to the upper side.

Claim 39. (new) A flow controller as recited in claim 34, wherein the configuration of the panel includes an upper side and the first axis vertically spaced from the upper side.

Claim 40. (new) A flow controller for releasably blocking a flow of liquid, in an undesired unblocked condition the liquid being allowed to flow in a generally horizontal flow path, the flow controller comprising:

a rigid self-supporting panel configured to block the flow path; and

a hinge member configured with an axis of rotation to mount the panel in a normal vertical or substantially-vertical orientation to substantially and releasably block the flow path, the hinge member being further configured to allow the panel to rotate on the axis of rotation in a desired range from the normal vertical orientation to the substantially-vertical orientation, the first hinge member being further configured to allow the panel to rotate on the axis of rotation past the substantially-vertical orientation to a flow release orientation out of the desired range;

the panel being further configured with a torque member spaced from the axis of rotation and having a weight value selected so that under the force of gravity the torque member acts through a moment arm around the axis of rotation to urge the panel to rotate on the axis of rotation and resist a normal process force of the flow of the liquid, the selected weight value allowing limited rotation of the panel on the axis of rotation so that notwithstanding the normal process force the panel remains in a position within the desired range, the selected weight value also allowing further rotation of the panel on the axis of rotation in response to a hydrodynamic force of the flow of the liquid, the hydrodynamic force generally substantially exceeding the normal process force, the allowed further rotation being movement out of the desired range so that the hydrodynamic force is released.

Claim 41. (new) A flow controller as recited in claim 40, wherein:

the configuration of the panel with the selected weight value acting through the moment arm around the axis of rotation is such that as the hydrodynamic force subsides, the force of gravity on the torque member having the selected weight value acting through the moment arm around the axis of rotation urges the panel to rotate on the axis of rotation to resist the subsiding hydrodynamic force so that upon cessation of the hydrodynamic force the panel is oriented within the desired range.

Claim 42. (new) A flow controller as recited in claim 40, wherein:

the configuration of the panel comprises a rigid self-supporting structure fabricated from glass fiber reinforced plastic.

Claim 43. (new) A flow controller as recited in claim 40, wherein:

the configuration of the panel comprises a rigid self-supporting structure fabricated from wood.

Claim 44. (new) A baffle as recited in claim 40, wherein:

the blockage of the flow of the liquid by the panel located in the desired range avoids interference with desired processing of the liquid and the release of the hydrodynamic force reduces damage to the panel;

the axis of rotation of the hinge member extends generally horizontally and a second axis of the panel extends generally vertically; and

the torque member is located along the second axis vertically spaced from the axis of rotation.

Claim 45. (new) A flow controller as recited in claim 40, wherein the configuration of the panel includes an upper side and the first axis extending adjacent to the upper side.

Claim 46. (new) A flow controller as recited in claim 40, wherein the configuration of the panel includes an upper side and the axis of rotation vertically spaced from the upper side.

Claim 47. (new) A flow controller having a characteristic of stability in a generally horizontal flow path, flow in the flow path being characterized by normal process flow having a normal range of flow force values, the flow being further characterized by seismic-induced flow having an abnormal range of flow force values substantially exceeding the normal range of flow force values, the flow controller comprising:

a rigid self-supporting panel configured with a hinge mounting the panel in a normal vertical orientation across the flow path, the hinge being configured to allow the panel to move from the normal vertical orientation to a flow release orientation; and

a torque member mounted on the panel and configured to urge the panel to resist the normal range of flow force values of the normal process flow by the panel remaining substantially in the vertical orientation and releasably blocking the flow path, the torque

member being further configured so that the urging of the panel to resist the normal range of flow force values of the normal process flow is overcome by a seismic force within the abnormal range of flow force values, the configuration of the torque member being such that in response to the seismic force the panel moves to the release orientation so that flow force in the abnormal range is released by movement of the panel to the release orientation.